

# POWERBALL BICYCLE TIRE REPLACEMENT

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## 5 BACKGROUND OF THE INVENTION

### **Field of the Invention**

The present invention relates to the field of extreme sports, especially those involving  
10 bicycles, skateboards, and other wheeled, non-motored vehicle or device. More specifically, this invention relates to sports performed with the aid of a trampoline.

### **Description of the Prior Art**

15 Extreme sports are those aggressive sports performed with the aid of a wheeled, non-motored vehicle or device (bicycle, skateboard, unicycle, roller blade skates) or a board (surfboard, snowboard). This is a rapidly growing area of sports that has only recently  
20 attained national-scale popularity.

Extreme sports involving wheeled devices are often performed on a track or U-shaped wooden ramp. The rider performs tricks while traveling up and down the walls of the  
ramp.

25 A novel offshoot of these sports is the use of bicycles and the like on a trampoline. In this event, there is no controlled horizontal movement of the bicycle. It acts much like a 2-wheeled pogo stick. The primary concern of the rider is vertical distance, and (of course) remaining in control of the bicycle.

30 A major disadvantage of wheeled devices, and particularly bicycles, in trampoline jumping, is the movement of the wheels. It is very difficult for the rider to maintain

control of the bicycle when the wheels move, propelling the vehicle in an unanticipated fashion in a horizontal direction. For this reason, riders usually attempt to block motion of the wheels, often by stuffing towels or rags between wheels and rims.

5 Another major disadvantage of bicycles in particular, one that is not amenable to such easy solution, is the narrow width of the tires. Horizontal stability of a wheeled vehicle, on a road or on a trampoline, is improved by increasing the width of the wheels and/or tires.

10 Yet another major disadvantage of bicycles in this sport is tire and wheel durability. Aluminum rims and rubber tires do not last long in use on a trampoline.

There is a need for a simple device that can replace the wheels (not just tires) of bicycles, skateboards, tricycles, unicycles, and the like in trampoline service. Ideally, such a device  
15 will be easy to fit on the device prior to use. Also, the vehicle should ideally be easily and readily convertible back to normal transportation wheels and tires after trampoline service.

## BRIEF SUMMARY OF THE INVENTION

The present invention consists of a large ball, substantially spherical in shape, with threads or bolts mounted in opposing sides of the ball. The threads, and the bolts, have the same dimensions as the axles of the bicycle wheels. Thus, the wheels can be removed from the bicycle and replaced by the ball. The ball is held in place by bolts, either applied at either side, through the fork and into the threads of the ball, or emanating from the ball and through the fork, with nuts applied at the ends of the bolts.

- 10 It is an object of the present invention to provide a replacement for bicycle wheels that will provide better service during trampoline service.

It is another object of the present invention to provide a better and safer ride for bicycle riders on a trampoline.

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It is a further object of the present invention to create a tool that is useful for learning the art of riding a bicycle on a trampoline in safety.

- 20 It is yet another object of this invention that the ball be suitable for use on other wheeled devices, such as (but not limited to) tricycles, unicycles, and skateboards.

It is yet another object of this invention that the ball is suitably made of materials that are best utilized for durability and long life in trampoline service.

- 25 It is yet another object of this invention that the device be lightweight and inexpensive, yet strong and durable.

- It is yet another object of this invention that the ball be easily transportable, and quickly and easily added to a wheeled device. Similarly, it is an object of this invention that at a later time, the ball be quickly and easily removed from a wheeled device.
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It is yet another object of this invention that the device be colorful and attractive.

The foregoing objects of the invention, and other objects and advantages will become apparent from the detailed description of the preferred embodiment below.

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## **BRIEF DESCRIPTION OF THE DRAWINGS**

Fig. 1 displays a bicycle rider using the present invention in place on a trampoline.

10 Bicycle **10**, rider **20**, and trampoline **30** are specifically disclaimed as not part of the present invention. Ball **12**, the shell of the present invention, is shown replacing conventional wheels and tires.

Fig. 2 shows the present invention attached to the fork of a bicycle or other cycle from a  
15 side view. Fork **14** is specifically disclaimed as not part of the present invention.

Fig. 3 is a frontal view of the present invention attached to the fork of a bicycle or other cycle in the manner of Fig. 2.

20 Fig. 4 presents a side view of the present invention detached from the fork of a bicycle or other cycle.

Fig. 5 displays a top view of the present invention detached as in Fig. 4.

25 Fig. 6 displays a most preferred embodiment of the present invention from a side perspective view. In most respects, including the ball **12**, cutaway area, flat surface **2**, and curved lip **4**, this embodiment is the same as the alternate embodiment shown in Figures 4 and 5. However, instead of a threaded channel **6**, this embodiment possesses a pair of threaded bolts **8**, one on each side of the ball, and substantially aligned with each other.

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Fig. 7 presents the most preferred embodiment of Fig. 6, this time from a top view, as it is being engaged with a fork 14 of a bicycle.

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## DETAILED DESCRIPTION OF THE INVENTION

Detailed descriptions of the preferred embodiment are provided herein. It is to be understood, however, that the present invention may be embodied in various forms.

10 Therefore, specific details disclosed herein are not to be interpreted as limiting, but rather as a basis for the claims and as representative basis for teaching one skilled in the art to employ the present invention in virtually any appropriately detailed system, structure or manner.

15 Referring to Figure 1, a bicycle rider 20 is shown using the present invention in place on a bicycle 10 on a trampoline 30. The ball of the present invention is shown as item 12. The ball does not rotate during use. The bicycle rider has no need of a chain, as is commonly found on bicycles to drive the wheels. To avoid injury or property damage, the rider will secure or remove entirely the chain prior to riding with the present invention.

20 Suitable safety equipment, such as (but not limited to) a bike helmet, as shown in this figure, is recommended during the operation of this invention.

The rider operates the invention as shown in Figure 1, jumping up and down, perhaps sideways, while on top of the bicycle. The present invention assists the rider in remaining

25 upright during these gyrations.

In Figure 2, the present invention is shown attached to a fork of a bicycle or other cycle. Fork 14 is not part of the current invention. The ball 12 is seen to have a cutaway, sculpted out area, leaving a flat surface 2 and a curved edge 4. The fork is placed on the

30 surface 2 and attached with a nut and bolt. In later figures, it will be seen that different embodiments of the present invention have different arrangements of nut and bolt. Still,

the basic principle of the attachment is the same as that of a bicycle wheel to the fork of a bicycle.

In one preferred embodiment, the ball will constitute a sphere of 6 inches in diameter.

5 The sculpted areas approximate a smooth U-shaped curve 4 where the base of the curve is about 2 ½ inches from the bottom of the sphere. The arms of the curve extend straight out to the edge of the sphere, at a point about 2 inches from the top of the sphere. The interior of the sculpted-out area is a roughly vertical wall 2. It contains a threaded channel at a point 2 inches from the top, and equidistant from the sides of the sphere. Thus, the U-  
10 shaped curve that defines the sculpted-out area ends at the same vertical position as the threaded channel. In other words, the ends of curve 4 and the attachment point of the ball 12 to the fork 14 fall approximately in a straight line across surface 2.

Figure 3 is a different view of the same object as Figure 2, the present invention attached  
15 to a bicycle fork. In this view, from the front, the change in form from a true sphere of ball 12 can be clearly seen. Indeed, ball 12 is wider at its base than the width of the fork 14. This affords greater stability to the bicycle. The fork will only fit at the top of 12, across flat surface walls 2, where the ball is narrower due to the cutaway areas.

20 In the specific embodiment portrayed in this view, a threaded channel 6 penetrates the ball 12 from one flat surface to the other. A threaded male bolt or other threaded male fastener of the right dimensions is then screwably engaged through channel 6, extending outward beyond either flat surface approximately 1 inch past each surface. This gives adequate room for the arms of the fork 14 to engage the bolt. The bolt is then fastened to  
25 the fork by means of a nut, or other threaded female fastener, once on each side of the ball as shown in Figure 3. Although the degree of threading can vary, a 3/8-24 thread has been found to work well with all embodiments of the present invention.

30 In an alternate embodiment envisioned within the present invention, but not portrayed in the figures, a threaded channel 6 penetrates the ball 12 from one flat surface to a point

less than halfway across the ball. Another threaded channel 6 penetrates the ball 12 from the opposite flat surface to a point less than halfway across the ball, directly in line with the first threaded channel 6. The result is equivalent to a single channel through a diameter of the sphere, as in the previously described embodiment, except that the single channel is interrupted for a portion of its run, in the middle of the ball.

A threaded male bolt or other threaded male fastener of the right dimensions is then screwably engaged through channel 6, extending from outward beyond either flat surface approximately 1 inch past each surface, through the arms of the fork 14 to engage the bolt, and into channel 6. Once more, this is repeated on the opposite side of the ball.

Although dimensions can vary appreciably within the confines of the current invention, a preferred grade of bolts used in this embodiment is grade 8 bolts with 3/8-24 thread.

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Yet a third, and most preferred, embodiment is described below in the description of Figure 6.

Figure 4 shows a flat side view of a bicycle fork 14 being disengaged from the present invention. Threaded channel 6 – or at least the surface entrance thereof – is seen in the center of flat surface 2. Curved lip 4 again marks the boundary between the upper, cutaway area, and the lower, full area of ball 12.

In Figure 5, an alternate view from the top is displayed of the invention in disengaged state, that is, not fastened to a bicycle fork. The full measure of the cutaway areas can be seen, leading to flat (and vertical) walls 2, curved lips 4, and threaded channel 6.

An alternate embodiment is portrayed in Fig. 6 from a perspective view, with the ball 12 lying disengaged on its side. In this embodiment, in the place of a threaded channel found in other embodiments is fastened a bolt 8, which extends outwardly from each surface 2

approximately 1 inch, and substantially in line with each other. Thus, this embodiment can be secured to a fork by means of 2 nuts, as shown in the next figure.

- 5 Fig. 7 presents the most preferred embodiment of Fig. 6, this time from a top view, as it is being engaged with a fork 14 of a bicycle. The fork will fit astride the ball, much as in Fig. 3, and surround the bolts 8. These are then attached by means of female fasteners, such as nuts, of the proper size and thread to mate with the bolts.

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